



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/817,539 | 04/02/2004 | Gary L. Bush | GLB002 | 2517 |

7590 05/24/2007
Jack V. Musgrove
2911 Briona Wood Lane
Cedar Park, TX 78613

| |
|----------|
| EXAMINER |
|----------|

COCKS, JOSIAH C

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

3749

| | |
|-----------|---------------|
| MAIL DATE | DELIVERY MODE |
|-----------|---------------|

05/24/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|---|-------------------------------|-------------------------------|--|
| Advisory Action Before the Filing of an Appeal Brief | Application No. 10/817,539 | Applicant(s) BUSH, GARY L. | |
| | Examiner Josiah Cocks | Art Unit 3749 | |

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 14 May 2007 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
(a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);
(b) ☐ They raise the issue of new matter (see NOTE below);
(c) ☒ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: See Continuation Sheet. (See 37 CFR 1.116 and 41.33(a)).


4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
The status of the claim(s) is (or will be) as follows:
Claim(s) allowed: _____.
Claim(s) objected to: _____.
Claim(s) rejected: _____.
Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because:
See Continuation Sheet.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). _____.
13. ☐ Other: _____.


Josiah Cocks
Primary Examiner
Art Unit 3749

Continuation Sheet

Continuation of 3. NOTE: The proposed amendments to claims 1, 27, and 54 would result in claims having scopes not previously considered by the examiner. Accordingly, these claims would necessarily require further consideration and/or search.

Continuation of 11. The request for reconsideration does NOT place the application in condition for allowance because:

Applicant's arguments filed May 14, 2007 have been carefully considered but are not persuasive. The examiner maintains the prior rejections to the claims.

Applicant argues that the prior art relied upon does not suggest adjusting frequency for nuclear resonant stimulation. The examiner respectfully disagrees.

In response, the examiner notes that the primary reference to Johnson clearly teaches that the excitation frequency output from the source of rf influence may be controlled/varied/adjusted to derive the desired frequency and that that excitation may be used with a magnetic field established at the point of fuel excitation (see at least col. 1, lines 45-53, and col. 4, lines 61-65). Further, Johnson makes clear that the desired frequency is well understood in the art to be dependent upon such factors as the type of the fuel and the strength of the magnetic field (see at least col. 3, lines 23-54).

Further, applicant has asserted that the Office action concedes that Johnson does not teach the adjustment of the frequency (see response, p. 17). The examiner respectfully disagrees.

In response, the examiner notes that the Office action does not concede that Johnson does not teach adjustment of the frequency but instead concedes that Johnson does not expressly recite that the above noted control of frequency is in response to a sensed operating parameter from a sensor of the combustion device. To remedy this deficiency the examiner has turned to either Kita or Monette. Each of these secondary references relate to fuel conditioning devices for combustion apparatus in the same field of endeavor as each of applicant's invention and Johnson. Each of these references suggest that the control of the fuel conditioning device is provided through the interpretation of sensed conditions from sensors arranged in the combustion system.

Regarding rejections under 35 U.S.C. § 103, the proper inquiry should not be limited to the specific structure shown by a reference, but should be into the concepts fairly contained therein, with the overriding question to be determined being whether those concepts would have suggested to one skilled in the art the modification called for by the claims. See *In re Bascom*, 230 F.2d 612, 614, 109 USPQ 98, 100 (CCPA 1956). Further, under 35 U.S.C. § 103, a reference must be considered not only for what it expressly teaches, but also for what is fairly suggests (*In re Burckel*, 592 F.2d 1175, 1179, 201 USPQ 67, 70 (CCPA 1979); *In re Lamberti*, 545 F.2d 745, 750, 192 USPQ 278, 280 (CCPA 1976)), as well as the reasonable inferences which the artisan would logically draw from the reference. See *In re Shepard*, 319 F.2d 194, 197, 138 USPQ 148, 150 (CCPA 1963).

In the present application, the examiner considers that a person of ordinary skill in the art would fairly infer from the teachings of the prior art that the frequency adjustment described in Johnson, which as noted above is dependent at least upon fuel type and field strength, would

Art Unit: 3749

reasonably be provided through sensors within the combustion to sense such conditions as suggested by each of Kita and Monette. Accordingly, applicant's arguments as to this issues have been carefully considered but are not persuasive.

Applicant also argues that Johnson never teaches an activation time of 1 second or less before combustion. To this end applicant contends that "Johnson states that the excitation occurs in the carburetor which is too far removed from the combustion location." The examiner respectfully disagrees.

In response, the examiner notes that Johnson states the following:

"[d]esirably, a pulsed field is established near the point of fuel combustion that has an output range that will excite the molecular or elemental structure of fuel components of portions of constituent elements." (Johnson, p. 1, lines 33-42).

and;

"[b]eneficial results of similar nature might be available if the excitation filed is provided in the fuel and air intake channels of the engine or at the combustion chamber itself." (Johnson, p. 3, lines 60-63) (emphasis added).

and;

"...beneficial results may be obtained where the activation apparatus is applied at different zones from that shown and described. Maximum benefits might actually be obtained when the apparatus is positioned at locations other than the specific place shown and described." (Johnson, p. 5, lines 45-50).

Each of these statements in Johnson appears to conflict with applicant's assertion. Accordingly, applicant's argument has been considered but is not persuasive.

Applicant also argues that the Monette reference does not suggest "nuclear resonance stimulation" and adjustment of the "frequency of the nuclear resonance stimulation" (response, p. 18).

In response, the examiner initially notes that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Further, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981).

In the present application, the rejections incorporating Monette are all on the basis of the primary reference to Johnson in light of the teachings of the secondary reference to Monette. As noted above, Johnson clearly suggests the use of nuclear resonance stimulation. Monette is generally cited to show that a person of ordinary skill in the art would understand that the device in Johnson that enables the frequency excitation would reasonably be understood in the art to be controlled through the use of certain sense parameters.

Applicant further argues that there is nothing in either Johnson or Monette to motivate one of ordinary skill in the art to apply the teachings of Monette to nuclear resonant stimulation. The examiner respectfully disagrees.

In response, the examiner notes that Johnson makes clear that that rf influence that is provided for frequency excitation may be provided through a variety of sources that result in rf outputs in multiple frequency ranges (see at least Johnson, co. 4, lines 61-65). Turning to Monette, as previously noted, this reference explicitly provides a frequency signal generator (14) that is responsive to certain sensed conditions to improve combustion efficiency (see at least col.

Art Unit: 3749

1, lines 21-47). The examiner again notes that it has been held that under 35 U.S.C. § 103, a reference must be considered not only for what it expressly teaches, but also for what is fairly suggests (*In re Burckel*, 592 F.2d 1175, 1179, 201 USPQ 67, 70 (CCPA 1979); *In re Lamberti*, 545 F.2d 745, 750, 192 USPQ 278, 280 (CCPA 1976)), as well as the reasonable inferences which the artisan would logically draw from the reference. See *In re Shepard*, 319 F.2d 194, 197, 138 USPQ 148, 150 (CCPA 1963). In this case, the examiner considers a person of ordinary skill in the art would reasonably apply the teachings of frequency control in response to sensed conditions as taught in Monette with the disclosure of Johnson as to control of excitation frequency to promote nuclear magnetic resonance.

Applicant has additionally argued that there is no suggestion in the prior art of record to suggest multiple nuclear resonance stimulation of different selected components of a combustion reaction. The examiner respectfully disagrees.

In response, the examiner notes that Johnson clearly provides that it is well understood in the art that various elements have different resonance frequencies (see at last Johnson, col. 3, lines 31-44). Further, Johnson expressly provides that the excitation of hydrogen has a distinct frequency, based at least on the magnetic field strength, which would be understood to be distinct from other elements, such as nitrogen (*id.* and col. 3, lines 63-66). Johnson then suggests that nitrogen may also be excited (see col. 3, lines 66-67). A person of ordinary skill in the art would reasonably infer that in exciting hydrogen and nitrogen, the frequency for such excitation of each element would necessarily be different.

Accordingly, applicant's arguments have been carefully considered but are not found persuasive.

USPTO Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Josiah Cocks whose telephone number is (571) 272-4874. The examiner can normally be reached on M-F 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Rinehart, can be reached on (571) 272-4881. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jcc
May 23, 2007

JOSIAH COCKS
PRIMARY EXAMINER
ART UNIT 3749